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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/557,011	11/06/2006	STEVEN JOWERS	04-0024 (BOCO/0137US)	9751

120226 7590 02/01/2018
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EXAMINER

VYAS, ABHISHEK

ART UNIT	PAPER NUMBER
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3691

NOTIFICATION DATE	DELIVERY MODE
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02/01/2018

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STEVEN JOWERS and BARRY R. FOX

Appeal 2016-004839
Application 11/557,011
Technology Center 3600

Before JOSEPH A. FISCHETTI, MICHAEL C. ASTORINO, and
AMEE A. SHAH, *Administrative Patent Judges*

SHAH, *Administrative Patent Judge*.

DECISION ON APPEAL¹

The Appellants² appeal under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1, 5–7, 10–12, 15, 17–32, and 35–42 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 2–4, 8, 9, 13, 14, 16, 33 and 34 are cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Throughout this Opinion, we refer to the Appellants' Appeal Brief ("Appeal Br.," filed Sept. 2, 2015), Reply Brief ("Reply Br.," filed Apr. 12, 2016, and Specification ("Spec.," filed Nov. 6, 2006), and to the Examiner's Answer ("Ans.," mailed Feb. 12, 2016) and Final Office Action ("Final Act.," mailed Mar. 6, 2015).

² According to the Appellants, the real party in interest is "The Boeing Company, Chicago, Illinois." Appeal Br. 3.

STATEMENT OF THE CASE

The Appellants' invention relates to "production rate and capacity planning." Spec. ¶ 8.

Claims 1 and 42 are the independent claims on appeal. Claim 1 (Appeal. Br. 13–14 (Claims App.)) is illustrative of the subject matter on appeal, and is reproduced below:

1. A computer-implemented method for production rate and capacity planning used in constructing schedules associated with a production plan, the computer-implemented method comprising:

implementing program instructions on a computer which are configured to: (1) interchangeably determine one of a resource quantity, a unit duration, or a production interval for Category 1 resources using known values for the other two of the resource quantity, the unit duration, and the production interval; (2) interchangeably determine one of the resource quantity or the unit duration for Category 2 resources, using a known value for the other of the resource quantity or the unit duration; and (3) determine a resource utilization for the Category 1 or the Category 2 resources;

determining, using the computer to execute the program instructions, one of the resource quantity, the unit duration, or the production interval for the Category 1 resources using the known values for the other two of the resource quantity, the unit duration, and the production interval;

determining, using the computer to execute the program instructions, one of the resource quantity or the unit duration for the Category 2 resources, using the known value for the other of the resource quantity or the unit duration;

determining, using the computer to execute the program instructions, the resource utilization for the Category 1 or the Category 2 resources; and

determining, using the computer to execute the program instructions, the unit duration for the Category 2 resources, using

the known value for the resource quantity of the Category 2 resources using the formula $D = a + \frac{b}{(Q_2 - c)}$ to determine the unit duration of the Category 2 resources, wherein Q_2 represents the Category 2 resources, D represents the unit duration of the Category 2 resources, and coefficients a , b , and c are determined, using the computer to execute the program instructions, by constructing a parametric series of resource vectors, by recording a total resource quantity for each member of the parametric series of resource vectors by constructing a single-unit schedule for each member of the parametric series of resource vectors. by recording the unit duration of the Category 2 resources for each member of the parametric series of single-unit schedules, by constructing one additional schedule without regard for resource requirements, and by computing coefficients of a parametric model of the unit duration of the Category 2 resources using the constructed single-unit schedules and the constructed one additional schedule;

whereby the program instructions executed by the computer are used in construction of schedules and whereby the program instructions executed by the computer output a schedule for a production plan which generally minimizes unit duration.

ANALYSIS

The Appellants argue claims 1, 5–7, 10–12, 15, 17–32, and 35–42 as a group. *See* Appeal Br. 9. We select claim 1 as the representative claim for this group. Claims 5–7, 10–12, 15, 17–32, and 35–42 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

Under 35 U.S.C. § 101, a patent may be obtained for “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” The Supreme Court has “long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Ass’n for*

Molecular Pathology v. Myriad Genetics, Inc., 133 S. Ct. 2107, 2116 (2013)).

The Supreme Court in *Alice* reiterated the two-step framework, set forth previously in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 78–79 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. The first step in that analysis is to “determine whether the claims at issue are *directed to* one of those patent-ineligible concepts.” *Id.* (citing *Mayo*, 566 U.S. at 79) (emphasis added). If so, the second step is to consider the elements of the claims “individually and ‘as an ordered combination’” to determine whether the additional elements “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo*, 566 U.S. at 79, 78).

In other words, the second step is to “search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (alteration in original) (quoting *Mayo*, 566 U.S. at 72–73). The Court acknowledged in *Mayo*, that “all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Mayo*, 566 U.S. at 71. We, therefore, look to whether the claims focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea, and merely invoke generic processes and machinery. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016).

Initially, we find unpersuasive the Appellants' argument that the Examiner's rejection is in error because the Examiner has not met the burden of "clearly articulating the reason(s) why the claimed invention is not eligible." Reply Br. 2; *see also id.* at 3. In rejecting the pending claims under § 101, the Examiner analyzes the claims using the *Mayo/Alice* two-step framework. Specifically, the Examiner looks to the language of the claim and determines that the claims are directed to the abstract idea of "determining an appropriate resource allocation quantity," a mathematical algorithm, i.e. relationship or formula. Final Act. 4; *see also* Ans. 4–5 (providing comparisons to cases). The Examiner further determines that the additional elements of the claims, taken alone and as an ordered combination, do not transform the abstract idea into a patent eligible invention, because

the elements involved in the recited process undertake their roles in performance of their activities according to their generic functionalities which are well-understood, routine and conventional. The elements together execute in routinely and conventionally accepted coordinated manners and interact with their partner elements to achieve an overall outcome which, similarly, is merely the combined and coordinated execution of generic computer functionalities which are well-understood, routine and conventional activities previously known to the industry.

The claim as a whole, does not amount to significantly more than the abstract idea itself. This is because the claim does not effect an improvement to another technology or technical field; the claim does not amount to an improvement to the functioning of a computer itself; and the claim does not move beyond a general link of the use of an abstract idea to a particular technological environment.

Final Act. 4.

Thus, the Examiner has set forth the statutory basis of the rejection in a sufficiently articulate and informative manner with reasoned rationale as to meet the notice requirement of § 132 as to why the claims are patent-ineligible. *See Alice*, 134 S. Ct. at 2355–57; *see also Chester v. Miller*, 906 F.2d 1574, 1578 (Fed. Cir. 1990) (Section 132 “is violated when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection”).

Turning to the first step of the *Alice* framework, we find unpersuasive the Appellants’ argument that the Examiner does not “provid[e] a reasoned rationale that identifies the judicial exception” (Reply Br. 2), because the Examiner clearly states that the claims are directed to the judicial exception of an abstract idea of a mathematical algorithm for “determining resource allocation” (Ans. 4; *see also* Final Act. 4–5). Further, the Examiner cites to and compares a number of cases in which our reviewing courts found to claims to be abstract mathematical formulas. Ans. 4–5. We agree with and adopt the Examiner’s determination and reasoning. Here, the claims involve nothing more than determining, calculating, and recording data to output a product plan schedule, without any particular inventive technology – an abstract idea. *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016) (collecting information and “analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category”).

The Appellants ostensibly do not disagree with the Examiner that the claims are directed to the abstract idea of determining resource allocation. *See* Appeal Br. 9–11. Rather, the Appellants argue against the Examiner’s

determination in the second step of the *Alice* framework and cite to the recited limitations of using formulas to construct vectors, recording data, and computing coefficients as support that the claims are significantly more than the abstract idea. *See id.*; *see also* Reply Br 2–3.

We agree with Examiner that the steps and functions of the claims, considered individually and as an ordered combination, do not improve another technology or technical field, do not improve the functioning of the computer itself, and require no more than a generic computer to perform generic computer functions. *See* Final Act. 4–5. The steps of determining and outputting do not address a technological problem and are not technological improvements. Any general purpose computer available at the time the application was filed would have been able to perform the functions of the claims. The Specification supports this view. The Specification does not elaborate on any computer structure to perform the method, but describes, in a very limited manner, a generic computer in that the method “may require use of computerized scheduling software and construction of the necessary resource models, activity models, and production models,” (Spec. ¶ 170) and “may be reasonably implemented as computer programs or rendered as flowcharts, paper workbooks or computerized spreadsheets” (*id.* ¶ 172). There is no further specification of particular technology for performing the steps. *See Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1263 (Fed. Cir. 2016); *see also Enfish*, 822 F.3d. at 1336 (focusing on whether the claim is “an improvement to [the] computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity”).

We are not persuaded by the Appellants' argument that the claims are not directed to a patent-ineligible abstract idea because "the recited claim elements include limitations that are not anticipated and are not obvious." Appeal Br. 9. An abstract idea does not transform into an inventive concept just because the prior art does not disclose or suggest it. *See Mayo*, 566 U.S. at 91. "Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry." *Myriad*, 133 S. Ct. at 2117. Indeed, "[t]he 'novelty' of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter." *Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981); *see also Mayo*, 566 U.S. at 91 (rejecting "the Government's invitation to substitute §§ 102, 103, and 112 inquiries for the better established inquiry under § 101").

We are also not persuaded by the Appellants' argument that the pending claims are not a patent-ineligible abstract idea because "they clearly do not seek to tie up any judicial exception such that others cannot practice it." Appeal Br. 9. Although the Supreme Court has described "the concern that drives this exclusionary principle [i.e., the exclusion of abstract ideas from patent eligible subject matter,] as one of pre-emption" (*see Alice*, 134 S. Ct. at 2354), characterizing pre-emption as a driving concern for patent eligibility is not the same as characterizing pre-emption as the sole test for patent eligibility. "The Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability" and "[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis." *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice*, 134 S. Ct. at 2354). Although

“preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *Id.* The aforementioned concept is not sufficiently limiting so as to fall clearly on the side of patent-eligibility.

We disagree with the Appellants’ contention that the claims are not directed to a patent ineligible abstract idea because they are similar to the claims found to be statutory in *Diamond v. Diehr*, 450 U.S. 175 (1981). Appeal Br. 10.³ In *Diamond*, the Court “held that a computer-implemented process for curing rubber was patent eligible, but not because it involved a computer. The claim employed a ‘well-known’ mathematical equation, but it used that equation in a process designed to solve a technological problem in ‘conventional industry practice.’” *Alice*, 134 S.Ct. at 2358 (citing *Diamond*, 450 U.S. at 177). Here, the Appellants do not indicate a technological problem the method is designed to solve. The Specification describes that resource planning involves repetitive work by ad-hoc or by trial and error exercises to try to answer questions related to the highest production rate and resources required to achieve that rate, and that the invention would more efficiently execute that work. Spec. ¶¶ 2, 4, 7. “[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.” *OIP*

³ The Appellants “cite to Example 3 in the 2014 Interim Eligibility Guidance (‘2014 IEG’), related to a Blue Noise Mask.” Reply Br. 3. However, Example 3 of the 2014 IEG discusses *Diamond*. 79 Fed. Reg. 74619, 74626 (Dec. 26, 2014). To the extent the Appellants argue a different example, the argument is not considered because it was not raised in the Appeal Brief, is not responsive to an argument raised in the Answer, and good cause has not been shown. See 37 C.F.R. § 41.41(b)(2).

Technologies, Inc. v. Amazon.com, Inc., 788 F.3d 1359, 1363 (Fed. Cir. 2015) (citing *Alice*, 134 S. Ct. at 2359). The claims do not address a technological problem, but rather address a business problem and generally and broadly recite limitations using a processor operating in its normal capacities of determining, recording, calculating, and outputting data. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 714 (Fed. Cir. 2014).

Thus, we are not persuaded of Examiner error in rejecting the claims under 35 U.S.C. § 101, and we sustain the Examiner's rejection of claims 1, 5–7, 10–12, 15, 17–32, and 35–42.

DECISION

The Examiner's rejection of claims 1, 5–7, 10–12, 15, 17–32, and 35–42 under 35 U.S.C. § 101 is AFFIRMED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED